

Fig. 1

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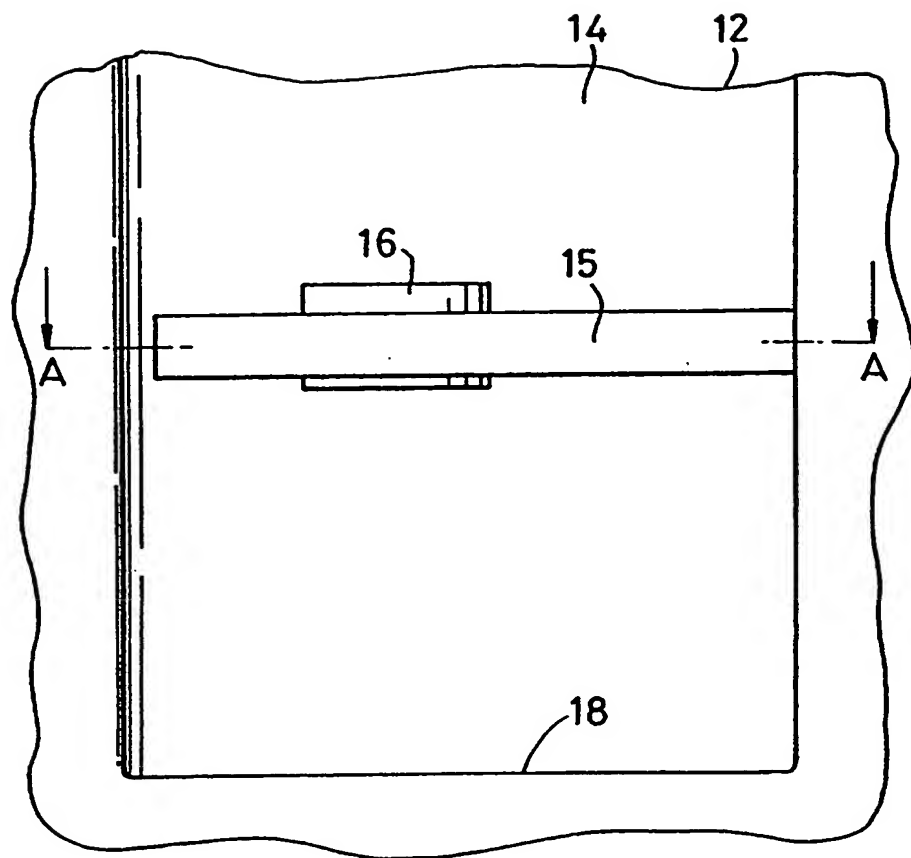


Fig. 2

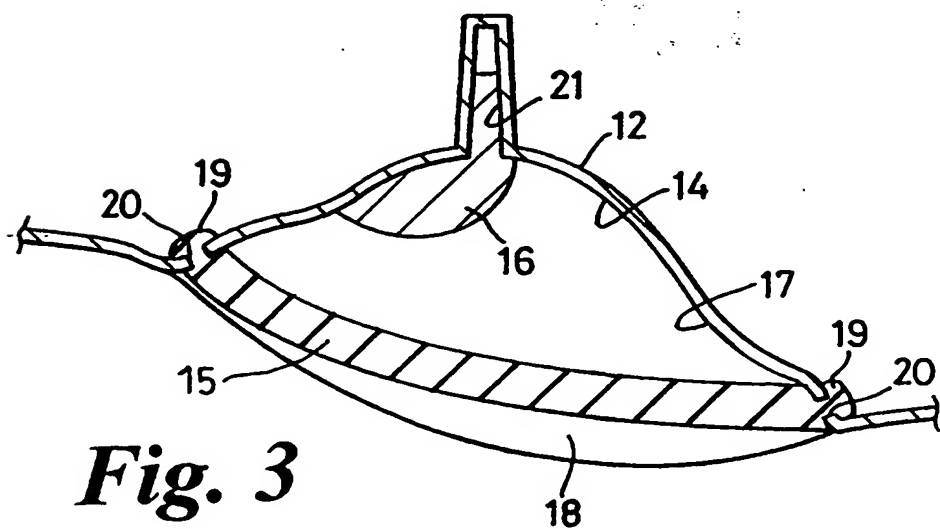


Fig. 3

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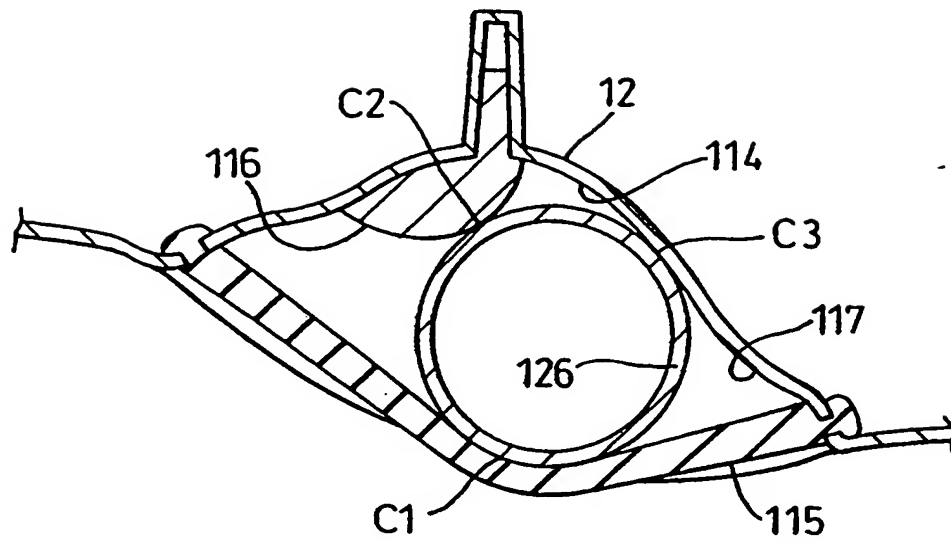


Fig. 4

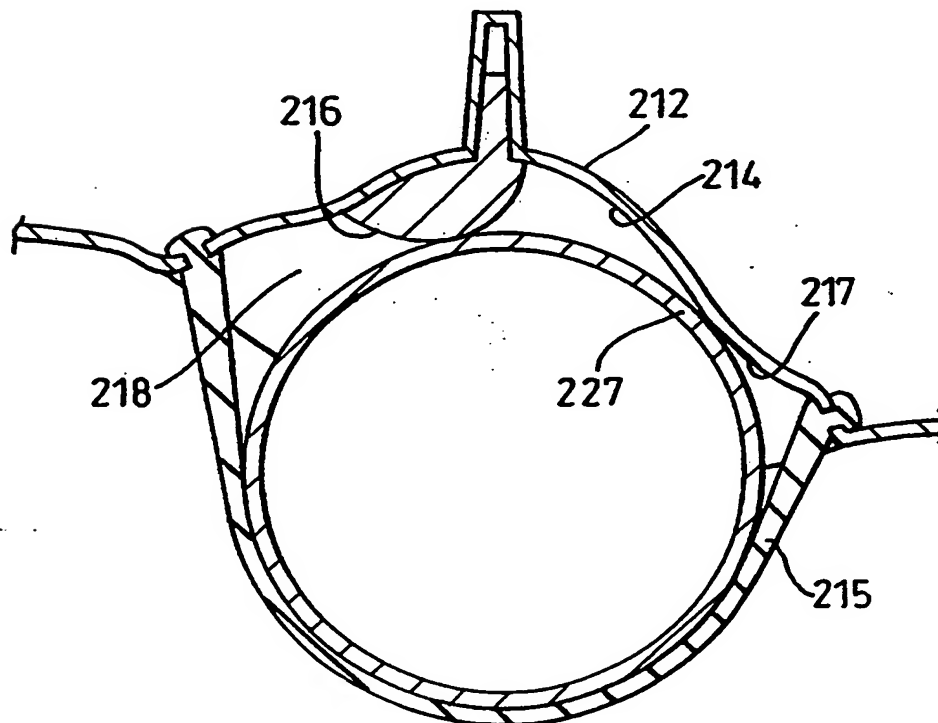


Fig. 5

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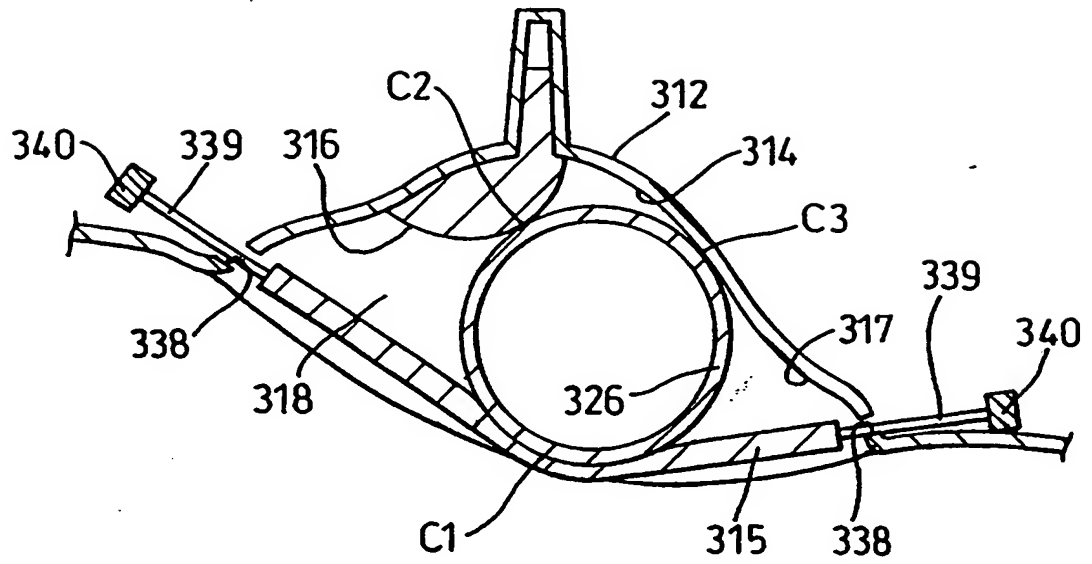


Fig. 6

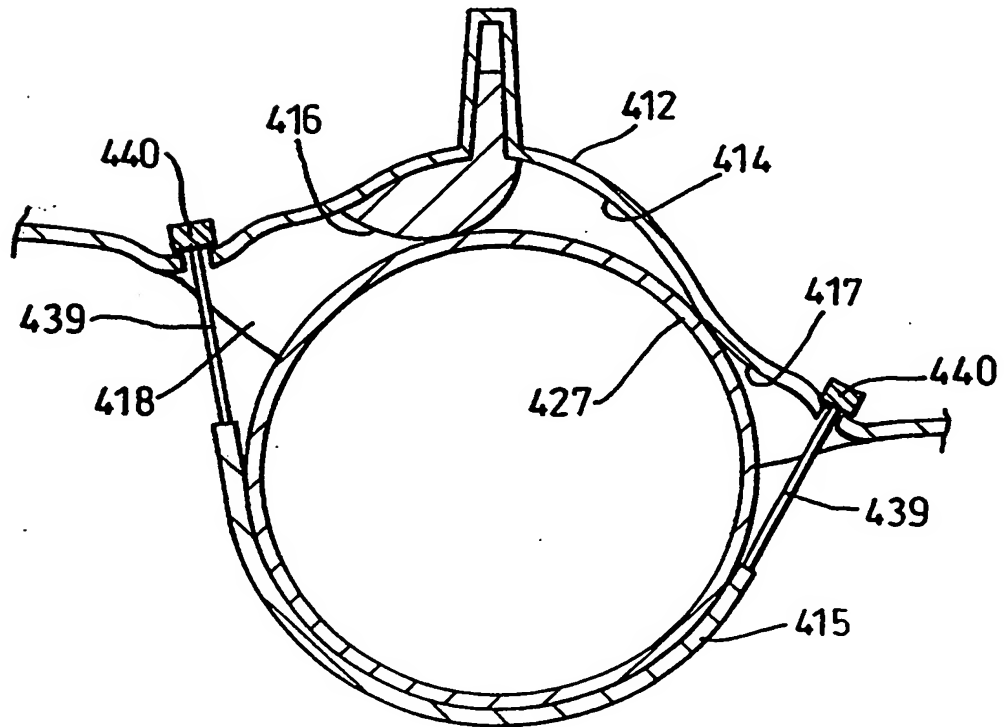


Fig. 7

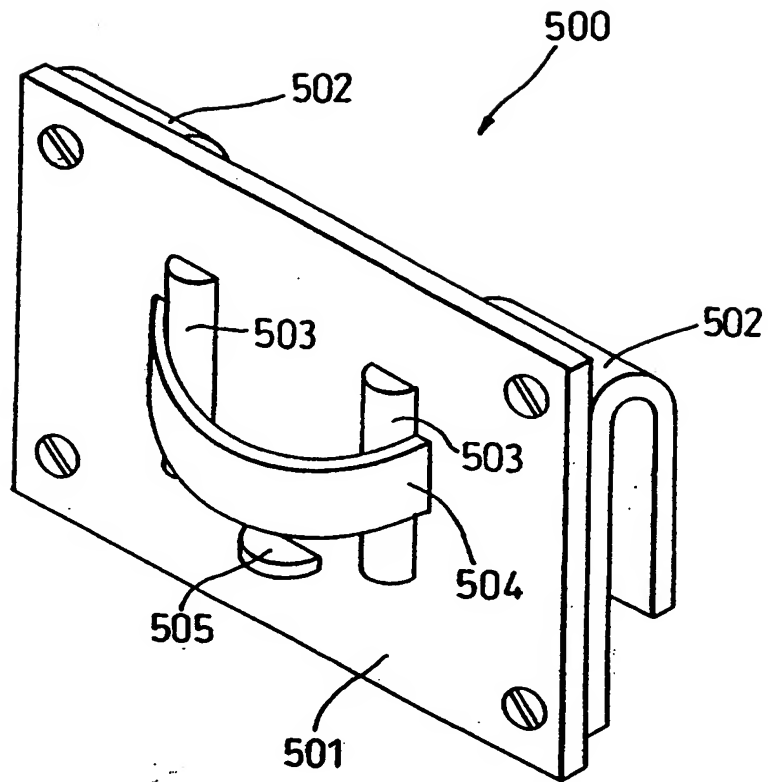


Fig. 8

A Container Holder for a Motor Vehicle

This invention relates to a container holder and in particular to a container holder for the interior of a motor vehicle to hold a can, cup or bottle.

It is well known to provide a container holder for a motor vehicle to hold
5 a drinks cup or can during transit so that the driver of the motor vehicle can take refreshment during a long journey.

It is an object of this invention to provide a very simple cost effective container holder that is able to adequately support containers of greatly different size.

10 According to the invention there is provided a container holder for a motor vehicle, the holder comprising:

(a) a first member which defines a generally concave recess; and

(b) a resilient member secured to extend across that recess,

said resilient member being configured to deform upon insertion of a
15 container into the recess in order to releasably hold that container therein, the holder characterised in that the recess includes at least one projection to

abut any container placed in the recess and deforming the resilient member, said resilient member and said at least one projection being arranged to cooperate to secure within the holder containers of different dimensions.

The projection, in combination with the recess and the strap, may co-
5 operate to form a three point support means.

There may be two spaced apart projections within the recess in which case at least one of the projections may be formed by a convex shaped portion of the recess.

The recess may have two convex portions therein for abutment against
10 a container placed between the resilient member and the wall defining the recess such that the container is supported at three spaced apart positions irrespective of its size.

One of the convex portions may be formed as part of the wall of the recess.

15 One of the convex portions may be formed by a separate convex shaped cam member that is attached to the wall of the recess.

The resilient member may be an elastically extensible member in which case it may be made from an elastomeric material or it may be a leaf spring

that is bent by insertion of a container in which case it may be made from spring steel.

The holder may further include a support member to support a lower surface of a container placed in the holder.

5 Advantageously, the recess may be part of a storage box for a motor vehicle.

According to a second aspect of the invention there is provided a container holder for a motor vehicle the holder comprising a first plate-like member, two spaced apart projections extending outwardly from the plate-
10 like member and an elastically deformable strap to hold a container to be supported by the holder against the projections.

The invention will now be described by way of example with reference to the accompanying drawings, in which:

Figure 1 is a pictorial view of a storage box for a motor vehicle
15 incorporating a container holder according to a first embodiment of this invention;

Figure 2 is a view of the container holder shown in Figure 1 when viewed in the direction of arrow "F";

Figure 3 is a cross-section on the line "A"-A" on Figure 2 showing a container holder according to the invention with no container in place;

Figure 4 is a view similar to Figure 3 showing a small container in place in the container holder;

5 Figure 5 is a view similar to Figure 3 showing a large container in place in the container holder;

Figure 6 is a view similar to Figure 4 but showing a second embodiment of the invention;

Figure 7 is a view similar to Figure 5 but showing a second embodiment
10 of the invention; and

Figure 8 is a view of a container holder according to a second aspect of the invention.

With reference to the drawing there is shown a storage box 10 having a rear wall 11 and a front wall 12 defining therebetween a cavity 13. The
15 rear wall 11 is attached by means (not shown) to an interior trim panel 5 such as a door panel of a motor vehicle.

The front wall 12 defines a generally concave recess 14 in which a container in the form of a cup or can may be accommodated. The lower end of the recess 14 is bounded by a support member in the form of a ledge 18 which in use supports a lower surface of a container supported by the
5 holder.

To retain a container within the recess 14 an elastically extensible member in the form of an elastic strap 15 is positioned across the entrance to the recess 14. The strap 15 is fastened in position at each end by means of a thickened end portion 19 which is engaged with a small aperture 20 in
10 the front wall 12. The recess 14 and the strap 15 define in combination a container holder that is able to securely but releasably hold a drink container such as a cup or can in position during transit of the motor vehicle. The elastic strap is made from an elastically extendible material such as rubber or elastomer.

15 To accommodate different sized containers the recess 14 has a convex portion 17 formed towards one end of the recess 14 and has a convex-shaped cam member 16 attached to the wall 12 towards the other side of the recess 14. The cam-like member 16 being held in position by engagement with a recess 21 formed in the wall 12.

With particular reference to Figure 4 it can be seen that when a small cup or can 26 is placed within the container holder it abuts the container holder at three positions. A first position C1 where it abuts the strap 15, a second position C2 where it abuts the cam 116 and a third position C3
5 where it abuts the convex portion 117 of the recess 114. The can or container 126 is thereby supported at three spaced apart positions and securely held within the container holder.

With reference to Figure 5 there is shown the same container holder but in this case a very large cup or can 227 is supported by the container holder.
10 In this condition the strap 215 is extended more than it is in the condition previously described with reference to Figure 4 but the cup or can 227 is still supported at three spaced apart positions defined by its contact with the strap 215 and its abutment against the cam 216 and the convex portion 217 of the recess 214. Therefore once again the cup or can 227 is securely
15 supported by the container holder by a three point contact support system.

The container holder can therefore support in an effective and stable manner containers of greatly varying size and in each case a three point of contact support system is provided. The minimum size of container that can be supported is that which is so small that it barely extends the strap 15
20 and the largest size container that can be accommodated is that which extends the strap 15 to its fullest extent.

With reference to Figures 6 and 7 there is shown a second embodiment of the invention. The principal difference between this embodiment and the previously described embodiment is that in this case the strap 315, 415 is not elastically extensible but is in the form of a leaf spring 339, 449 made from plastic coated spring steel. When a small container 326 is placed in the recess 314 in the container holder as defined by the front wall 312 so that it rests upon the ledge 318 the strap 315 is bent from its naturally straight shape. This bending causes a reaction force to be produced by the strap 315 biasing the container against the recess 314 and a lug 316 thereby holding it in position. The ends of the strap 315 have thickened end portions 340 in the form of snap on plastic end caps 340. When a container is placed in the container holder the strap 315 is pulled out from the front wall 312 through two apertures 338 in the wall 312. The end caps 340 prevent the strap 315 from being pulled completely out of the wall 312.

When in position the container 326 is held in position by a three point location arrangement having a first contact C1 with the strap 315 a second contact C2 with the lug 316 and a third point of contact C3 with the recess 314. In this way the container 326 is maintained securely in place.

With reference to Figure 7 there is shown a container holder as described with reference to Figure 6 and for which identical parts have been given the same reference numerals with the addition of 100.

In Figure 7 a large container 427 is shown in position which has caused the strap 415 to be fully extended such that the end caps 440 have contacted a rear side of the wall 412. However, it will be appreciated that even with such a large container in place the three point location arrangement ensures
5 that the container 427 is held securely in place.

With reference to Figure 8 there is shown a container holder 500 having a flat plate member 501 for attachment to part of the interior body structure of a motor vehicle by two clips 502. Two spaced projections 503 extend outwardly from the plate 501 for engagement with a container (not shown)
10 to be held by the holder 500. An elastic strap 504 is connected at both ends to the plate 501. A lower support 505 is provided to support a base of a container (not shown) to be supported by the holder 500.

Upon insertion of a container into the holder 500 the strap 504 is extended to provide a light gripping force against the container and the
15 container rests against three spaced apart supports in the form of the two projections 503 and the strap 504.

Although this invention has been described with particular reference to a cup or can for containing drink it will be appreciated that other small objects of a similar nature could also be similarly supported.

CLAIMS

1. A container holder for a motor vehicle, the holder comprising:

(a) a first member which defines a generally concave recess; and

(b) a resilient member secured to extend across that recess,

said resilient member being configured to deform upon insertion of a container into the recess in order to releasably hold that container therein, the holder characterised in that the recess includes at least one projection to abut any container placed in the recess and deforming the resilient member, said resilient member and said at least one projection being arranged to co-operate to secure within the holder containers of different dimensions.

2. A holder as claimed in Claim 1 in which the or each projection in combination with the recess and the resilient member forms a three point support means with respect to a container.

3. A holder as claimed in Claim 1 or in Claim 2 in which there are two spaced apart projections within the recess.

4. A holder as claimed in Claim 3 in which at least one of the projections is to be formed by a convex shaped portion of a wall defining the recess.

5. A holder as claimed in Claim 4 in which one of the convex portions is formed by a separate convex shaped cam member that is attached to a wall defining the recess.
6. A container holder as claimed in any preceding claim in which the holder further includes a support member to support a lower surface of a container placed in the holder.
7. A container holder as claimed in any of Claims 1 to 6 in which the resilient member is an elastically extensible member.
8. A container holder as claimed in Claim 7 in which the elastically extensible member is made from an elastomeric material.
9. A container holder as claimed in any of Claims 1 to 6 in which the resilient member is a leaf spring that is elastically deformed by the insertion of a container.
10. A container holder as claimed in Claim 9 in which the leaf spring is made from spring steel.
11. A container holder as claimed in any preceding Claim in which the recess is formed as part of a storage box for a motor vehicle.
12. A container holder for a motor vehicle the holder comprising a first plate-like member, two spaced apart projections extending outwardly from the plate-like member and an elastically deformable strap to hold a container to be supported by the holder against the projections.

13. A container holder for a motor vehicle substantially as described herein with reference to the accompanying drawings.
14. A motor vehicle including a container holder as claimed in any preceding claim.



Application No: GB 9825579.7
Claims searched: 1 to 11

Examiner: Colin Thompson
Date of search: 17 March 1999

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK Cl (Ed.Q): B7J; A4B
Int Cl (Ed.6): B60N 3/10
Other: Online: WPI, EDOC, JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X,E	GB 2326141 A (Ford Global Tech Inc) See Fig 6	1,2,6-8
X	GB 2159784 A (Bearne) See Fig 1	1,2,6-8
X	WO 84/04072 A1 (Pratt) See Fig 2	1,6-8
X	US 5289962 A (Chrysler Corp) See Fig 9	1-4,6,9
X	US 5279489 A (Wheelock) See especially Fig 2	1,2,4,6-8
X	JP 09-70333 A (Kotobuki & Co Ltd) See Figs 2 & 3	1,2,6-8

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.